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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,458	12/03/2003	Kao-Yang Huang	78320 (16-5 US)	6716

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EXAMINER

DIACOU, ARI M

ART UNIT	PAPER NUMBER
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3663

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/726,458

Applicant(s)

HUANG ET AL.

Examiner

Ari M. Diacou

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

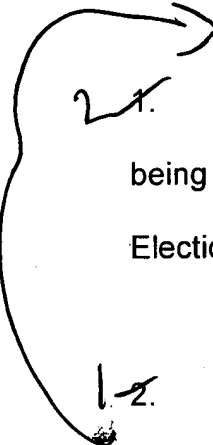
- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

- 
1. Claim 11 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 9, 2005.
  2. Applicant's election without traverse of Group I in the reply filed on August 9, 2005 is acknowledged.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As presently set forth, the random spectral component is essentially a black box with no description of the internals thereof. The disclosure is thus insufficient in failing to set forth in an adequate and sufficient fashion, a description of the internals of the random spectral component which would enable the device to perform all of the

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features (i.e., unduly increasing the quality factor Q of the gain response in each channel etc.) that are disclosed. If applicant is of the opinion that there is a description in the prior art (in the form of literature, etc. having a date prior to the filing date of this application), of the internals of the random spectral component that can accomplish the disclosed and claimed features (i.e., unduly increasing the quality factor Q of the gain response in each channel etc.), copies of said literature, etc., must be submitted for appropriate review by the Office. See In re Ghiron et al, 169 USPQ 723, 727.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The italicized clauses are essentially method limitations or statements or intended or desired use and are being examined as if the apparatus were capable of performing the functions described in said clauses. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

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See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

7. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugaya et. al.

- Regarding claim 1, Sugaya discloses a multistage amplifier for amplifying light over a wavelength band comprising:
  - a first span of amplifying fiber; [Fig. 5, #7] [Col. 5, lines 31-46]
  - a second span of amplifying fiber optically coupled with the first span; [Fig. 5, #8] [Col. 5, lines 47-60]
  - a gain flattening filter (GFF) in-line with at least one of the first and second spans of amplifying fiber *for attenuating predetermined wavelengths of amplified light, WHEREIN A FIRST gain spectral response of the first and second spans of amplifying fiber including the GFF measured over the wavelength band has shape of a ripple that oscillates as a function of wavelength such that a plurality of peaks in the form of maxima and valleys in the form of minima occur at a plurality of different wavelengths,*

*each different wavelength corresponding to a different channel; and, [Fig. 5, #11; the examiner considers the attenuator to be a GFF] [Col. 5, lines 16-30]*

- *a second compensating filter in line with one of the first and second spans of fiber having a SECOND spectral response that has a second plurality of peaks in the form of maxima and valleys in the form of minima, wherein the second spectral response is absent at least 50% of four most predominant peaks or valleys at channels where peaks or valleys, respectively, were present in the first spectral response, and WHEREIN a maximum ripple amplitude in the second spectral response is less than a maximum ripple amplitude in the first gain spectral response. [Fig. 5, #15] [Col. 8, lines 19-29] [Col. 9, lines 8-24] [Col. 8, lines 52-59]*
- Regarding claim 2, Sugaya discloses a multistage optical amplifier as defined in claim 1, wherein the GFF is downstream of the first span of amplifying fiber and is disposed to receive light from at least one of the first and second spans of amplifying fiber. [Fig. 5]
- Regarding claim 6, Sugaya discloses a multistage optical amplifier as defined in claim 1 wherein the second compensating filter is disposed between the first and second spans of optical fiber. [Fig. 3, #15] [Col. 7, lines 62 - Col. 8, line 3]

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- Regarding claim 7, Sugaya discloses a multistage optical amplifier as defined in claim 1 wherein the GFF is disposed between the first and second spans of optical fiber. *[Fig. 5, #11; the examiner considers the attenuator to be a GFF]* [Col. 5, lines 16-30]
- Regarding claim 9, Sugaya discloses an amplifier for amplifying light over a wavelength band comprising:
  - a first span of amplifying fiber; [Fig. 5, #7] [Col. 5, lines 31-46]
  - a gain flattening filter (GFF) in-line with the first span of amplifying fiber *for attenuating predetermined wavelengths of amplified light, WHEREIN A FIRST gain spectral response of the first span of amplifying fiber including the GFF measured over the wavelength band has shape of a ripple that oscillates as a function of wavelength such that a plurality of peaks in the form of maxima and valleys in the form of minima occur at a plurality of different wavelengths; and, [Fig. 5, #11; the examiner considers the attenuator to be a GFF]* [Col. 5, lines 16-30]
  - a second compensating filter having a SECOND spectral response *that has a second plurality of peaks in the form of maxima and valleys in the form of minima, wherein the second spectral response is absent at least 50% of peaks at wavelengths where peaks were present in the first spectral response, and WHEREIN a maximum ripple amplitude in the second spectral response is less than a maximum ripple amplitude in the*

*first gain spectral response.* [Fig. 5, #15] [Col. 8, lines 19-29] [Col. 9, lines 8-24] [Col. 8, lines 52-59]

- Regarding claim 10, Sugaya discloses an amplifier as defined in claim 9, wherein the amplifying fiber is erbium-doped fiber. [Col. 5, lines 16-30]

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to



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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. The italicized clauses are essentially method limitations or statements or intended or desired use and are being examined as if the apparatus were capable of performing the functions described in said clauses. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

- Regarding claim 4, a multistage optical amplifier as defined in claim 2, wherein the second compensating filter is a Bragg grating and wherein the second spectral response *has minima at least 10% of wavelengths where peaks were present in the first spectral response.*

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12. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugaya as applied to claim 1 above, and further in view of Leyva et al. (USP No. 6327405). Sugaya discloses the optical amplifier with all of the limitations of claim 1 but fails to explicitly state that a Bragg grating is a type of filter, and its appropriate use in optical systems. Leyva teaches that a Bragg grating is a type of filter, and when it is advantageous to use a Bragg grating in an optical system [Col. 1, lines 12-38]. Therefore, it would have been obvious to one skilled in the art (e.g. an optical engineer) at the time the invention was made, to use a Bragg grating in an optical system for the advantage of increased flexibility in setting the gain profile of the filter being employed.

13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugaya in view of Leyva as applied to claims 3-4 above. Sugaya further discloses that his group's invention amplifies signals within the wavelength range from 1525 nm to 1565 nm [Col. 7, lines 47-61]. Sugaya also discloses that the amplifying fiber of his group's invention is rare-earth doped [Col. 5, lines 16-30].

### ***Conclusion***

14. The prior art which is cited but not relied upon is considered pertinent to applicant's disclosure.

15. While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ari M. Diacou whose telephone number is (571) 272-5591. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMD 8-18-2005

  
JACK KEITH  
PRIMARY EXAMINER  
SP 3663